

Grades 9–12: Measurement

Measurement tools must include electronic devices as well as traditional measurement tools. Examples of basic technologies that might be used are calculator-based laboratories (CBLs), calculator-based rangers (CBRs), the Global Positioning System (GPS), digital micrometers, and infrared distance measurers.

STANDARD I. Understand measurable attributes of objects and the units, systems, and processes of measurement.

EXPECTATION A. Make decisions about units, scales, and viewing windows that are appropriate for problem situations involving measurement.

1. Make judgments about the appropriateness of units of measure and scales within a system and between systems.

STANDARD II. Apply appropriate techniques, tools, and formulas to determine measurements.

EXPECTATION A. Analyze precision, accuracy, and approximate error in measurement situations.

EXPECTATION B. Understand and use formulas for the area, surface area, and volume of geometric figures, including cones, spheres, and cylinder.

1. Use formulas for surface area and volume of three-dimensional objects to solve practical problems.

EXPECTATION

- C. Apply informal concepts of successive approximation, upper and lower bounds, and limit in measurement situations.

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| 1. Use linear measurements to estimate lengths of curves. |
| 2. Use polygons to estimate areas of curved regions. |
| 3. Use boxes or spheres to estimate the volume of curved solids. |

EXPECTATION

- D. Use unit analysis to check measurement computations.

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| *1. Use unit analysis to check measurement computations. |
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